LISTING OF THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) An optical information recording medium in which light is projected in a spot to thereby record/reproduce information and in which at least a recording layer and a light-transmitting layer are disposed in this order on a substrate having a guide groove for tracking of the spotted light and in which the light is projected in the spot to the recording layer from the side of the light-transmitting layer to record the information both in a first portion of the recording layer corresponding to a flat portion between mutually adjacent guide grooves and a second portion of the recording layer corresponding to the inside of the guide groove,

wherein recording marks with mark lengths nT to mT (where T is a unit length, n, m are integers of one or more, $n < m$) are formed on both the first and second portions, and mT is selected so that an amplitude IL1 of a reproduced signal from the longest recording mark with the mark length mT recorded on the first portion, and an amplitude IL2 of a reproduced signal from the longest recording mark with the mark length mT recorded on the second portion satisfy a relation of $1 < (IL1/IL2) < 1.3$.

2. (Original) An optical information recording medium in which light is projected in a spot to thereby record/reproduce information and in which at least a recording layer and a light-transmitting layer are disposed in this order on a substrate having a guide groove for tracking of the spotted light and in which the light is projected in the spot to the recording layer from the side of the light-transmitting layer to record the information both in a first portion of the recording layer corresponding to a flat portion between mutually adjacent guide grooves and a second portion of the recording layer corresponding to the inside of the guide groove,

wherein recording marks with mark lengths nT to mT (where T is a unit length, n, m are integers of one or more, $n < m$) are formed on both the first and second portions, and an amplitude IL1 of a reproduced signal from the longest recording mark with the mark length mT recorded on the first portion, an amplitude IS1 of a reproduced signal from the shortest recording

mark with the mark length nT recorded on the first portion, an amplitude IL2 of a reproduced signal from the longest recording mark with the mark length mT recorded on the second portion, and an amplitude IS2 of a reproduced signal from the shortest recording mark with the mark length nT recorded on the second portion satisfy a relation of $0.7 < (IS1/IL1)/(IS2/IL2) < 1$.

3. (Withdrawn) An optical information recording medium in which light is projected in a spot to thereby record/reproduce information and in which at least a recording layer and a light-transmitting layer are disposed in this order on a substrate having a guide groove for tracking of the spotted light and in which the light is projected in the spot to the recording layer from the side of the light-transmitting layer to record the information both in a first portion of the recording layer corresponding to a flat portion between mutually adjacent guide grooves and a second portion of the recording layer corresponding to the inside of the guide groove,

wherein a reflectance of the recording layer drops when the recording is performed with respect to the recording layer, and a difference $\Delta\varphi = \varphi a - \varphi c$ between a phase φa of reflected light after the recording and a phase φc of the reflected light before the recording satisfies a relation of $0° < \Delta\phi \leq 15°$.

4. (Withdrawn) An optical information recording medium in which light is projected in a spot to thereby record/reproduce information and in which at least a recording layer and a light-transmitting layer are disposed in this order on a substrate having a guide groove for tracking of the spotted light and in which the light is projected in the spot to the recording layer from the side of the light-transmitting layer to record the information both in a first portion of the recording layer corresponding to a flat portion between mutually adjacent guide grooves and a second portion of the recording layer corresponding to the inside of the guide groove,

wherein a reflectance of the recording layer increases when the recording is performed with respect to the recording layer, and a difference $\Delta\varphi = \varphi a - \varphi c$ between a phase φa of reflected light after the recording and a phase φc of the reflected light before the recording satisfies a relation of $-15° \leq \Delta\phi < 0°$.

5. (Currently Amended) An optical information recording medium in which light is projected in a spot to thereby record/reproduce information and in which at least a recording layer is disposed on a substrate having a guide groove for tracking of the spotted light and in which the light is projected in the spot to the recording layer from the side of the substrate to record the information both in a first portion of the recording layer corresponding to a flat portion between mutually adjacent guide grooves and a second portion of the recording layer corresponding to the inside of the guide groove,

wherein recording marks with mark lengths nT to mT (where T is a unit length, n, m are integers of one or more, $n < m$) are formed on both the first and second portions, and mT is selected so that an amplitude IL1 of a reproduced signal from the longest recording mark with the mark length mT recorded on the first portion, and an amplitude IL2 of a reproduced signal from the longest recording mark with the mark length mT recorded on the second portion satisfy a relation of $1 < (IL2/IL1) < 1.3$.

6. (Original) An optical information recording medium in which light is projected in a spot to thereby record/reproduce information and in which at least a recording layer is disposed on a substrate having a guide groove for tracking of the spotted light and in which the light is projected in the spot to the recording layer from the side of the substrate to record the information both in a first portion of the recording layer corresponding to a flat portion between mutually adjacent guide grooves and a second portion of the recording layer corresponding to the inside of the guide groove,

wherein recording marks with mark lengths nT to mT (where T is a unit length, n, m are integers of one or more, $n < m$) are formed on both the first and second portions, and an amplitude IL1 of a reproduced signal from the longest recording mark with the mark length mT recorded on the first portion, an amplitude IS1 of a reproduced signal from the shortest recording mark with the mark length nT recorded on the first portion, an amplitude IL2 of a reproduced signal from the longest recording mark with the mark length mT recorded on the second portion, and an amplitude IS2 of a reproduced signal from the shortest recording mark with the mark length nT recorded on the second portion satisfy a relation of $0.7 < (IS2/IL2)/(IS1/IL1) < 1$.

7. (Withdrawn) An optical information recording medium in which light is projected in a spot to thereby record/reproduce information and in which at least a recording layer is disposed on a substrate having a guide groove for tracking of the spotted light and in which the light is projected in the spot to the recording layer from the side of the substrate to record the information both in a first portion of the recording layer corresponding to a flat portion between mutually adjacent guide grooves and a second portion of the recording layer corresponding to the inside of the guide groove,

wherein a reflectance of the recording layer drops when the recording is performed with respect to the recording layer, and a difference $\Delta\varphi = \varphi a - \varphi c$ between a phase φa of reflected light after the recording and a phase φc of the reflected light before the recording satisfies a relation of $0° < \Delta\phi \leq 15°$.

8. (Withdrawn) An optical information recording medium in which light is projected in a spot to thereby record/reproduce information and in which at least a recording layer is disposed on a substrate having a guide groove for tracking of the spotted light and in which the light is projected in the spot to the recording layer from the side of the substrate to record the information both in a first portion of the recording layer corresponding to a flat portion between mutually adjacent guide grooves and a second portion of the recording layer corresponding to the inside of the guide groove,

wherein a reflectance of the recording layer increases when the recording is performed with respect to the recording layer, and a difference $\Delta\varphi = \varphi a - \varphi c$ between a phase φa of reflected light after the recording and a phase φc of the reflected light before the recording satisfies a relation of $-15° \leq \Delta\phi < 0°$.

9. (Previously Presented) The optical information recording medium according to claim 1, wherein the recording layer is formed of a material whose optical reflectance or phase changes by irradiation with laser light.

10. (Original) A method of recording/reproducing optical information, comprising the steps of: projecting light in spots with respect to both first and second portions of a recording layer of the optical information recording medium according to claim 1; and forming recording marks having mark lengths nT to mT to perform recording, so that IL1 and IL2 satisfy a relation of $1 < (IL1/IL2) < 1.3$.

11. (Original) A method of recording/reproducing optical information, comprising the steps of: projecting light in spots with respect to both first and second portions of a recording layer of the optical information recording medium according to claim 2; and forming recording marks having mark lengths nT to mT to perform recording, so that IL1, IS1, IL2 and IS2 satisfy a relation of $0.7 < (IS1/IL1)/(IS2/IL2) < 1$.

12. (Withdrawn) A method of recording/reproducing optical information, comprising the steps of: projecting light in spots with respect to both first and second portions of a recording layer of the optical information recording medium according to claim 3; lowering a reflectance of the recording layer; and forming recording marks having mark lengths nT to mT to perform recording, so that $\Delta\varphi$ satisfies a relation of $0° < \Delta\varphi \leq 15°$.

13. (Withdrawn) A method of recording/reproducing optical information, comprising the steps of: projecting light in spots with respect to both first and second portions of a recording layer of the optical information recording medium according to claim 4; increasing a reflectance of the recording layer; and forming recording marks having mark lengths nT to mT to perform recording, so that $\Delta\varphi$ satisfies a relation of $-15° \leq \Delta\phi < 0°$.

14. (Original) A method of recording/reproducing optical information, comprising the steps of: projecting light in spots with respect to both first and second portions of a recording layer of the optical information recording medium according to claim 5; and forming recording marks having mark lengths nT to mT to perform recording, so that IL1 and IL2 satisfy a relation of $1 < (IL2/IL1) < 1.3$.

15. (Original) A method of recording/reproducing optical information, comprising the steps of: projecting light in spots with respect to both first and second portions of a recording layer of the optical information recording medium according to claim 6; and forming recording marks having mark lengths nT to mT to perform recording, so that IL1, IS1, IL2 and IS2 satisfy a relation of $0.7 < (IS2/IL2)/(IS1/IL1) < 1$.

16. (Previously Presented) A method of recording/reproducing optical information, having a step of projecting light in spots using an objective lens with respect to both first and second portions of a recording layer using the optical information recording medium according to claim 1, wherein assuming that a wavelength of the light is λ, a numerical aperture of the objective lens is NA, and a shortest mark length of the recording mark is ML, $0.25 < NA \cdot ML/\lambda < 0.38$ is established.